

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (currently amended): A system for reading and recording data, the system comprising:

an enclosure;

a magnetic disk rotationally mounted within said enclosure;

an actuator pivotally mounted within said enclosure and having a distal end adjacent a surface of said magnetic disk;

a slider connected with said distal end of said actuator in close proximity to said surface of said magnetic disk, said slider having a leading edge, a trailing edge opposite said leading edge, and first and second opposing sides, the slider having a generally longitudinal roll axis about which roll rotation of the slider may occur;

a base surface on said slider at a first elevation, said base surface extending to a corner defined by the intersection of said trailing edge and said second side;

a first rail defined by a raised surface extending from said base surface to a first raised elevation and extending generally lengthwise adjacent said first side of said slider from a location proximal to said leading edge;

a second rail defined by a raised surface extending from said base surface to said first raised elevation and extending generally lengthwise adjacent said second side of said slider from a location proximal said leading edge;

a pad extending from said base surface at a corner defined by the intersection of said trailing edge and said first side;

an intermediate surface formed at an elevation between said base surface and said raised elevations of said first and second rails, said intermediate surface extending between said rails and said leading edge and extending between a portion of said first and second rails;

a magneto-resistive read element disposed within said slider at the location of said pad;
and

a magneto-resistive write element disposed within said slider, adjacent said read element at the location of said pad;

whereby the roll axis is situated toward the pad.

Claim 2 (original): A system as recited in claim 1 wherein said first and second rails are asymmetric with respect to one another.

Claim 3 (original): A system as recited in claim 2 wherein said second rail has a greater surface area than said first rail.

Claim 4 (original): A system as recited in claim 1 wherein said pad has more than one level.

Claim 5 (currently amended): A slider for use in a magnetic data recording system, the slider comprising;

a substrate having a leading edge, a trailing edge opposite said leading edge, first and second opposing sides and a base surface, the slider having a generally longitudinal roll axis about which roll rotation of the slider may occur;

a pad extending from said base surface proximal to a corner defined by the juncture of said first side and said trailing edge, said base surface extending to a corner defined by the juncture of said second side and said trailing edge;

a first rail defined by a raised surface extending lengthwise along a portion of said base surface adjacent said first side;

a second rail defined by a raised surface extending lengthwise along said base surface adjacent said second side;

a magneto-resistive read element disposed within said substrate at said pad; and

a magneto-resistive write element disposed within said substrate at said pad;

whereby the roll axis is situated toward the pad.

Claim 6 (original): A slider as recited in claim 5 further comprising an intermediate surface having an elevation between that of said base surface and that of said rails, said intermediate surface extending from said rails to said leading edge and extending between a portion of said rails.

Claim 7 (original): A slider as recited in claim 5 wherein said first and second rails are asymmetrical with one another.

Claim 8 (original): A slider as recited in claim 5 wherein said second rail has a greater surface area than said first rail.

Claim 9 (original): A slider as recited in claim 5 wherein said pad has first and second levels said second level having a greater elevation from said base surface than said first level, and said first level steps up to said second level.

Claim 10 (original): A slider as recited in claim 9 wherein said first level is positioned on said pad to be opposite said trailing edge with respect to said second level.

Claim 11 (original): A slider as recited in claim 5 wherein said intermediate surface terminates at a location between said rails to define a shoulder extending from said first rail to said second rail.

Claim 12 (original): A slider as recited in claim 5, wherein said first and second rails bend to turn toward one another at their ends most proximal to said leading edge.

Claim 13 (original): A slider as recited in claim 12 wherein said turned in portions of said rails define there between a channel.

Claim 14 (currently amended): A slider for use in a data recording and retrieval system, the slider comprising:

a substrate having a proximal end, a distal end, first and second opposing sides, and a base surface bounded by said proximal and distal ends and said first and second sides, the slider having a generally longitudinal roll axis about which roll rotation of the slider may occur;

a raised surface extending from said base surface extending from a location near said proximal end to a location between said proximal and distal ends;

said raised surface having a recessed inner portion defining a cavity opening toward its distal end;

a pad extending from said base surface located proximal to said distal end and one of said first and second sides, said base surface extending to said other side toward said distal end of said substrate;

a read element disposed within said substrate at said pad; and
a write element disposed within said substrate at said pad;
whereby the roll axis is situated toward the pad.

Claim 15 (original): A slider as recited in claim 14 further comprising a channel having laterally opposed sides and a floor, formed in said raised surface, and extending from the proximal end of said raised portion to said recessed portion.

Claim 16 (original): A slider as recited in claim 15 further wherein said floor of said channel extends above said base surface and forms a shoulder with said recessed portion, said shoulder extending laterally from said first channel side to said second channel side.

Claim 17 (previously presented): A slider as recited in claim 14 wherein said pad has multiple levels, each level being progressively higher than the one before it as they proceed toward the distal end of the substrate.

Claim 18 (original): A slider as recited in claim 14 wherein said base surface is generally flat as it proceeds toward the distal end of the substrate at the side opposite said pad.

Claim 19 (withdrawn): A method of forming a slider for use in a data recording and retrieval system, said method comprising the steps of:

providing a generally block shaped substrate, said substrate having a surface bounded by a leading edge, a trailing edge opposite said leading edge, and first and second lateral sides opposite one another, said substrate further having a read element and a write element both located near a corner defined by the juncture of said trailing edge and said first lateral side;

polishing said surface of said substrate sufficiently to render said surface smooth;

masking said surface, in a first masking step, said mask exposing a first pad portion of said surface located at said corner defined by the juncture of said trailing edge and said first lateral

side, exposing first and second laterally opposed rail portions, and covering said surface exclusive of said exposed portions;

exposing said masked substrate to electromagnetic radiation; and
etching said surface

Claim 20 (withdrawn): A method as recited in claim 19, further comprising the steps of:

masking said substrate, in a second masking step, said masking step exposing a second pad portion larger than and inclusive of said first pad portion, exposing said first and second laterally opposed rail portions and exposing at least a portion of said surface forward of and between said laterally opposed rails;

exposing said masked substrate to electromagnetic radiation in a second exposing step; and
etching said substrate.

Claim 21 (withdrawn): A method as recited in claim 20 wherein said electromagnetic radiation is within the spectrum of visible light.

Claim 22 (new): A system for reading and recording data, the system comprising:

an enclosure;
a magnetic disk rotationally mounted within said enclosure;
an actuator pivotally mounted within said enclosure and having a distal end adjacent a surface of said magnetic disk;

a slider connected with said distal end of said actuator in close proximity to said surface of said magnetic disk, said slider having a leading edge, a trailing edge opposite said leading edge, and first and second opposing sides;

a base surface on said slider at a first elevation, said base surface extending to a corner defined by the intersection of said trailing edge and said second side;

a first rail defined by a raised surface extending from said base surface to a first raised elevation and extending generally lengthwise adjacent said first side of said slider from a location proximal to said leading edge;

a second rail defined by a raised surface extending from said base surface to said first raised elevation and extending generally lengthwise adjacent said second side of said slider from a location proximal to said leading edge;

a pad extending from said base surface at a corner defined by the intersection of said trailing edge and said first side, there being no additional pad extending from said base surface in the area of said base surface between said pad and a corner defined by the intersection of said trailing edge and said second side;

an intermediate surface formed at an elevation between said base surface and said raised elevations of said first and second rails, said intermediate surface extending between said rails and said leading edge and extending between a portion of said first and second rails;

a magneto-resistive read element disposed within said slider at the location of said pad;
and

a magneto-resistive write element disposed within said slider, adjacent said read element at the location of said pad.

Claim 23 (new): A system as recited in claim 22 wherein said first and second rails are asymmetric with respect to one another.

Claim 24 (new): A system as recited in claim 23 wherein said second rail has a greater surface area than said first rail.

Claim 25 (new): A system as recited in claim 22 wherein said pad has more than one level.

Claim 26 (new): A slider for use in a magnetic data recording system, the slider comprising;

a substrate having a leading edge, a trailing edge opposite said leading edge, first and second opposing sides and a base surface;

a pad extending from said base surface proximal to a corner defined by the juncture of said first side and said trailing edge, said base surface extending to a corner defined by the juncture of said second side and said trailing edge, there being no additional pad extending from said base surface in the area of said base surface between said pad and a corner defined by the intersection of said trailing edge and said second side;

a first rail defined by a raised surface extending lengthwise along a portion of said base surface adjacent said first side;

a second rail defined by a raised surface extending lengthwise along said base surface adjacent said second side;

a magneto-resistive read element disposed within said substrate at said pad; and
a magneto-resistive write element disposed within said substrate at said pad.

Claim 27 (new): A slider as recited in claim 26 further comprising an intermediate surface having an elevation between that of said base surface and that of said rails, said intermediate surface extending from said rails to said leading edge and extending between a portion of said rails.

Claim 28 (new): A slider as recited in claim 26 wherein said first and second rails are asymmetrical with one another.

Claim 29 (new): A slider as recited in claim 26 wherein said second rail has a greater surface area than said first rail.

Claim 30 (new): A slider as recited in claim 26 wherein said pad has first and second levels said second level having a greater elevation from said base surface than said first level, and said first level steps up to said second level.

Claim 31 (new): A slider as recited in claim 30 wherein said first level is positioned on said pad to be opposite said trailing edge with respect to said second level.

Claim 32 (new): A slider as recited in claim 26 wherein said intermediate surface terminates at a location between said rails to define a shoulder extending from said first rail to said second rail.

Claim 33 (new): A slider as recited in claim 26, wherein said first and second rails bend to turn toward one another at their ends most proximal to said leading edge.

Claim 34 (new): A slider as recited in claim 33 wherein said turned in portions of said rails define there between a channel.

Claim 35 (new): A slider for use in a data recording and retrieval system, the slider comprising:
a substrate having a proximal end, a distal end, first and second opposing sides, and a base surface bounded by said proximal and distal ends and said first and second sides;

a raised surface extending from said base surface extending from a location near said proximal end to a location between said proximal and distal ends;

said raised surface having a recessed inner portion defining a cavity opening toward its distal end;

a pad extending from said base surface located proximal to said distal end and one of said first and second sides, said base surface extending to said other side toward said distal end of said substrate, there being no additional pad extending from said base surface in the area of said base surface between said pad and a corner defined by the intersection of said trailing edge and said second side;

a read element disposed within said substrate at said pad; and

a write element disposed within said substrate at said pad.

Claim 36 (new): A slider as recited in claim 35 further comprising a channel having laterally opposed sides and a floor, formed in said raised surface, and extending from the proximal end of said raised portion to said recessed portion.

Claim 37 (new): A slider as recited in claim 36 further wherein said floor of said channel extends above said base surface and forms a shoulder with said recessed portion, said shoulder extending laterally from said first channel side to said second channel side.

Claim 38 (new): A slider as recited in claim 35 wherein said pad has multiple levels, each level being progressively higher than the one before it as they proceed toward the distal end of the substrate.

Claim 39 (new): A slider as recited in claim 35 wherein said base surface is generally flat as it proceeds toward the distal end of the substrate at the side opposite said pad.